

217/782-2113

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT

PERMITTEE

Good Samaritan Hospital
Attn: Joe Kybartas
3815 Highland Avenue
Downers Grove, Illinois 60515

<u>Application No.:</u> 05090010	<u>I.D. No.:</u> 043030ADQ
<u>Applicant's Designation:</u> 4 BOILERS	<u>Date Received:</u> September 7, 2005
<u>Subject:</u> Boilers, Generators and Sterilizers	
<u>Date Issued:</u> April 25, 2006	<u>Expiration Date:</u> April 25, 2011
<u>Location:</u> 3815 Highland Avenue, Downers Grove	

Permit is hereby granted to the above-designated Permittee to OPERATE emission source(s) and/or air pollution control equipment consisting of: 2 - 51.2 mmBtu/hour Natural Gas Boilers with Distillant Fuel as Backup, 1 - 12.5 mmBtu/hour Natural Gas Boiler with Distillant Fuel as Backup, 1 - 8.6 mmBtu/hour Natural Gas Boiler with Distillant Fuel as Backup, 1 - 1250 Kw Diesel Emergency Generator, 1 - 1000 Kw Diesel Emergency Generator, 3 - Ethylene Oxide Sterilizers, pursuant to the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

- 1a. This federally enforceable state operating permit is issued to limit the emissions of nitrogen oxides (NO_x) and hazardous air pollutants (HAPs) from the source to less than major source thresholds, i.e. NO_x to less than 25 tons per year, and HAPs to less than 10 tons per year of any single HAP or 25 tons per year of any combination of such HAPs, as further described in Attachment A. As a result, the source is excluded from requirements to obtain a Clean Air Act Permit Program permit.
- b. Prior to issuance, a draft of this permit has undergone a public notice and comment period.
- c. This permit supersedes the current permit(s) issued for this location.
- 2a. This permit is issued based on this source not being a participating source in the Emissions Reduction Market System (ERMS), 35 Ill. Adm. Code Part 205, pursuant to 35 Ill. Adm. Code 205.200. This is based on the source's actual VOM emissions during the seasonal allotment period from May 1 through September 30 of each year being less than 10 tons and the source's baseline emissions also being less than 10 tons.
- b. The Permittee shall maintain the following records to allow the confirmation of actual VOM emissions during the seasonal allotment period:
 - i. Records of operating data and other information for each individual emission unit or group of related emission units at

the source, as appropriate, to determine actual VOM emissions during the seasonal allotment period;

- ii. Records of the VOM emissions, in tons, during the seasonal allotment period, with supporting calculations, for each individual emission unit or group of related emission units at the source, determined in accordance with the procedures that may be specified in this permit; and
 - iii. Total VOM emissions from the source, in tons, during each seasonal allotment period, which shall be compiled by November 30 of each year.
- c. In the event that the source's VOM emissions during the seasonal allotment period equal or exceed 10 tons, the source shall become a participating source in the ERMS and beginning with the following seasonal allotment period, shall comply with 35 Ill. Adm. Code Part 205, by holding allotment trading units (ATUs) for its VOM emissions during each seasonal allotment period, unless the source obtains exemption from the ERMS by operating with seasonal VOM emissions of no more than 15 tons pursuant to a limitation applied for and established in a Clean Air Act Permit Program (CAAPP) permit or a Federally Enforceable State Operating Permit (FESOP).
- d. Pursuant to 35 Ill. Adm. Code 205.316(a), any participating or new participating source shall not operate without a CAAPP permit or FESOP. Pursuant to 35 Ill. Adm. Code 205.316(a)(2), if a participating or new participating source does not have a CAAPP permit containing ERMS provisions and the source elects to obtain a permit other than a CAAPP permit, the source shall apply for and obtain a FESOP that contains, in addition to other necessary provisions, federally enforceable ERMS provisions, including baseline emissions, allotment for each seasonal allotment period, identification of any units deemed to be insignificant activities for purposes of the ERMS, emissions calculation methodologies, and provisions addressing all other applicable requirements of 35 Ill. Adm. Code Part 205.
- 3a. This permit is issued based on the Hospital/Medical Infectious Waste Incinerator (HMIWI) having been permanently decommissioned (i.e. permanently shutdown).
- b. Within 30 days after the issuance of this permit, the Permittee shall demonstrate that the HMIWI has been rendered permanently inoperable by one of the following methods:
- i. The primary chamber door has been welded shut;
 - ii. The HMIWI has been dismantled; or
 - iii. Other means that reasonably demonstrate that the HMIWI is no longer functional.

- 4a. No person shall cause or allow the emission of smoke or other particulate matter, with an opacity greater than 30 percent, into the atmosphere from any emission unit, pursuant to 35 Ill. Adm. Code 212.123(a), except as allowed by 35 Ill. Adm. Code 212.123(b) and 212.124.
- b. The emission of smoke or other particulate matter from any such emission unit may have an opacity greater than 30 percent but not greater than 60 percent for a period or periods aggregating 8 minutes in any 60 minute period provided that such opaque emissions permitted during any 60 minute period shall occur from only one such emission unit located within a 305 m (1000 ft) radius from the center point of any other such emission unit owned or operated by such person, and provided further that such opaque emissions permitted from each such emission unit shall be limited to 3 times in any 24 hour period, pursuant to 35 Ill. Adm. Code 212.123(b).
- 5a. No person shall cause or allow the emission of sulfur dioxide into the atmosphere in any one hour period from any new fuel combustion source with actual heat input smaller than, or equal to, 73.2 MW (250 mmBtu/hr), burning liquid fuel exclusively to exceed 0.46 kg of sulfur dioxide per MW-hr of actual heat input when distillate fuel oil is burned (0.3 lbs/mmBtu), pursuant to 35 Ill. Adm. Code 214.122(b) (2).
- b. No person shall cause or allow the emission of sulfur dioxide into the atmosphere from any process emission unit to exceed 2000 ppm, pursuant to 35 Ill. Adm. Code 214.301.
- c. Pursuant to 35 Ill. Adm. Code 214.304 the emissions from the burning of fuel at process emission units located in the Chicago major metropolitan area shall comply with Condition 5(a) (see also 35 Ill. Adm. Code Part 214 Subparts B through F).
- 6. No person shall cause or allow the emission of carbon monoxide (CO) into the atmosphere from any fuel combustion emission source with actual heat input greater than 2.9 MW (10 mmBtu/hour) to exceed 200 ppm, corrected to 50 percent excess air, pursuant to 35 Ill. Adm. Code 216.121.
- 7a. At the above location, the Permittee shall not keep, store, or utilize distillate fuel oil (Grades No. 1 and No. 2) with a sulfur content greater than the larger of the following values:
 - i. 0.28 weight percent, or
 - ii. The wt. percent given by the formula:
$$\text{Maximum wt. percent sulfur} = (0.000015) \times (\text{Gross heating value of oil, Btu/lb}).$$
- b. Organic liquid by-products or waste materials shall not be used in these fuel combustion emission sources.

- c. The Illinois EPA shall be allowed to sample all fuels stored at the above location.
- 8a. Emissions and operation of the boilers, when combusting natural gas, shall not exceed the following limits:

- i. Natural gas usage: 300,000 therms/month and 3,000,000 therms/year.
- ii. Total emissions from the boilers from the combustion of natural gas shall not exceed the following limits:

<u>Pollutant</u>	<u>Emission Factor (lb/Therm)</u>	<u>Emissions (Tons/Month)</u>	<u>Emissions (Tons/Year)</u>
NO _x	0.0100	1.50	14.98
CO	0.0084	1.26	12.59
VOM	0.00055	0.08	0.82
SO ₂	0.00006	0.01	0.09
PM	0.00076	0.12	1.14

These limits are based on maximum fuel usage and standard emission factors AP-42 (Tables 1.4-1 and 1.4-2, AP-42, Volume I, Fifth Edition, Supplement D, March, 1998).

- b. Emissions and operation of the boilers, when No. 2 Fuel Oil, shall not exceed the following limits:
- i. No. 2 fuel oil usage: 40,000 gallons/month and 400,000 gallons/year.
- ii. Total emissions from the boilers from the combustion of No. 2 fuel oil shall not exceed the following limits:

<u>Pollutant</u>	<u>Emission Factor (lb/1,000 Gallons)</u>	<u>Emissions (Tons/Month)</u>	<u>Emissions (Tons/Year)</u>
NO _x	20.0	0.40	4.00
CO	5.0	0.10	1.00
VOM	0.2	0.01	0.04
SO ₂	142 S	0.85	8.51
PM	2.0	0.04	0.40

These limits are based on maximum fuel oil usage and standard AP-42 emission factors (Tables 1.3-1 and 1.3-3, AP-42, Volume I, Fifth Edition, Supplement D, September, 1998). S indicates that the weight % of sulfur in the oil should be multiplied by the value given.

- 9a. Diesel fuel shall be the only fuel fired in the generator. The use of any other fuel shall require a revised permit.

- b. Total operations and emissions for the standby generators shall not exceed the following limits:

Total Diesel Fuel Usage	
<u>(Gallons/Month)</u>	<u>(Gallons/Year)</u>
1,902	11,410

<u>Pollutant (Total all Eight Units)</u>	<u>Emission Factors</u>	<u>Emissions</u>	
	<u>(lbs/1000 Gal)</u>	<u>(Tons/Mo)</u>	<u>(Tons/Yr)</u>
Nitrogen Oxides (NO _x)	448	3.04	18.26
Carbon Monoxide (CO)	119	0.81	4.85
Sulfur Dioxide (SO ₂)	42.4	0.29	1.73
Particulate Matter (PM)	14	0.10	0.57
Volatile Organic Material (VOM)	12.6	0.09	0.51

These limits are based on standard AP-42 emission factors (Table 3.4-1, AP-42, Volume I, Fifth Edition, Supplement B, October 1996) of diesel fuel, and an applicant requested limit of 500 hours per year.

- 10a. Operation of the three ethylene oxide sterilizers shall not exceed the following limits:
- i. Ethylene Oxide Gas Usage: 0.5 tons/month and 5.0 tons per year.
 - ii. Emissions of ethylene oxide:

<u>Material</u>	<u>Material Usage</u>		<u>VOM Emissions</u>	
	<u>(Tons/Mo)</u>	<u>(Tons/Yr)</u>	<u>(Tons/Mo)</u>	<u>(Tons/Yr)</u>
Ethylene Oxide	0.5	5.0	0.5	5.0

- b. These limits define the potential emissions of the ethylene oxide sterilizers and are based on the actual emissions determined from the maximum capacity. Compliance with annual limits shall be determined on a monthly basis from a running total of 12 months of data.
11. The emissions of HAPs as listed in Section 112(b) of the Clean Air Act shall not equal or exceed 10 tons per year of any single HAP or 25 tons per year of any combination of such HAPs, or such lesser quantity as USEPA may establish by rule which would require the Permittee to obtain a Clean Air Act Permit Program permit from the Agency. As a result of this condition, this permit is issued based on the emissions of any HAP from this source not triggering the requirement to obtain a Clean Air Act Permit Program permit from the Agency.
12. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).

- 13a. The Permittee shall maintain records of the following items for the source:
- i. The use of natural gas in the boilers, therms/month and therms/year (running total);
 - ii. The use of No. 2 fuel oil in the boilers and the emergency generators, gallons/month and gallons/year (running total);
 - iii. The sulfur content of the fuel oil used in the diesel-powered generators and boilers (% by weight), this shall be recorded for each shipment of fuel oil delivered to the source;
 - iv. The amount of ethylene oxide gas used in the sterilizers, tons/month and tons/year (running total).
 - v. Monthly and aggregate annual emissions of CO, NO_x, PM, SO₂, and VOM from the boilers and generators with supporting calculations (tons/month and tons/year); and
 - vi. Monthly and aggregate annual emissions of VOM from the ethylene oxide sterilizers with supporting calculations (tons/month and tons/year).
- b. The Permittee shall maintain records for any deviation or exceedance from the requirements of this permit, as determined by the above records or by other means, with date, time, duration, description, corrective action and measures to prevent future reoccurrences.
- c. All records required by this permit shall be retained at a readily accessible location at the source for at least 5 years from the date of entry and shall be made available for inspection and copying by the Agency and USEPA upon request.
14. If there is an exceedance of the requirements of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Illinois EPA's Compliance Section in Springfield, Illinois within 30 days after the exceedance. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or violation and efforts to reduce emissions and future occurrences.
15. Two (2) copies of required reports and notifications concerning equipment operation or repairs, performance testing or a continuous monitoring system shall be sent to:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Compliance Section (#40)
P.O. Box 19276
Springfield, Illinois 62794-9276

Telephone: 217/782-5811 Fax: 217/782-6348

and one (1) copy shall be sent to the Illinois EPA's regional office at the following address unless otherwise indicated:

Illinois Environmental Protection Agency
Division of Air Pollution Control
9511 West Harrison
Des Plaines, Illinois 60016

Telephone: 847/294-4000

If you have any questions on this, please call George Kennedy at 217/782-2113.

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

DES:GMK:psj

cc: Region 1

Attachment A - Emissions Summary

This attachment provides a summary of the maximum emissions from this facility operating in compliance with the requirements of this federally enforceable permit. In preparing this summary, the Illinois EPA used the annual operating scenario which results in maximum emissions from such a plant. The resulting maximum emissions are below the levels (e.g., 100 tons/year of NO_x, CO, SO₂, and VOM) at which this source would be considered a major source for purposes of the Clean Air Act Permit Program. Actual emissions from this source will be less than predicted in this summary to the extent that less material is handled and control measures are more effective than required in this permit.

		E M I S S I O N S					(Tons/Year)	
Emission							HAPs	
<u>Unit</u>	<u>Fuel</u>	<u>NO_x</u>	<u>CO</u>	<u>SO₂</u>	<u>PM</u>	<u>VOM</u>	<u>Single</u>	<u>Combined</u>
4 Boilers	Natural Gas	14.98	12.59	0.09	0.82	1.14		
	Oil	4.00	1.00	8.51	0.04	0.40		
2 Generators	Oil	18.26	4.85	1.73	0.57	0.51		
3 Sterilizers						5.00		
	Total	37.24	18.43	10.33	2.11	6.38	< 10	< 25

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